Combating Chlamydia in the Military: Why Aren't We Winning the War?

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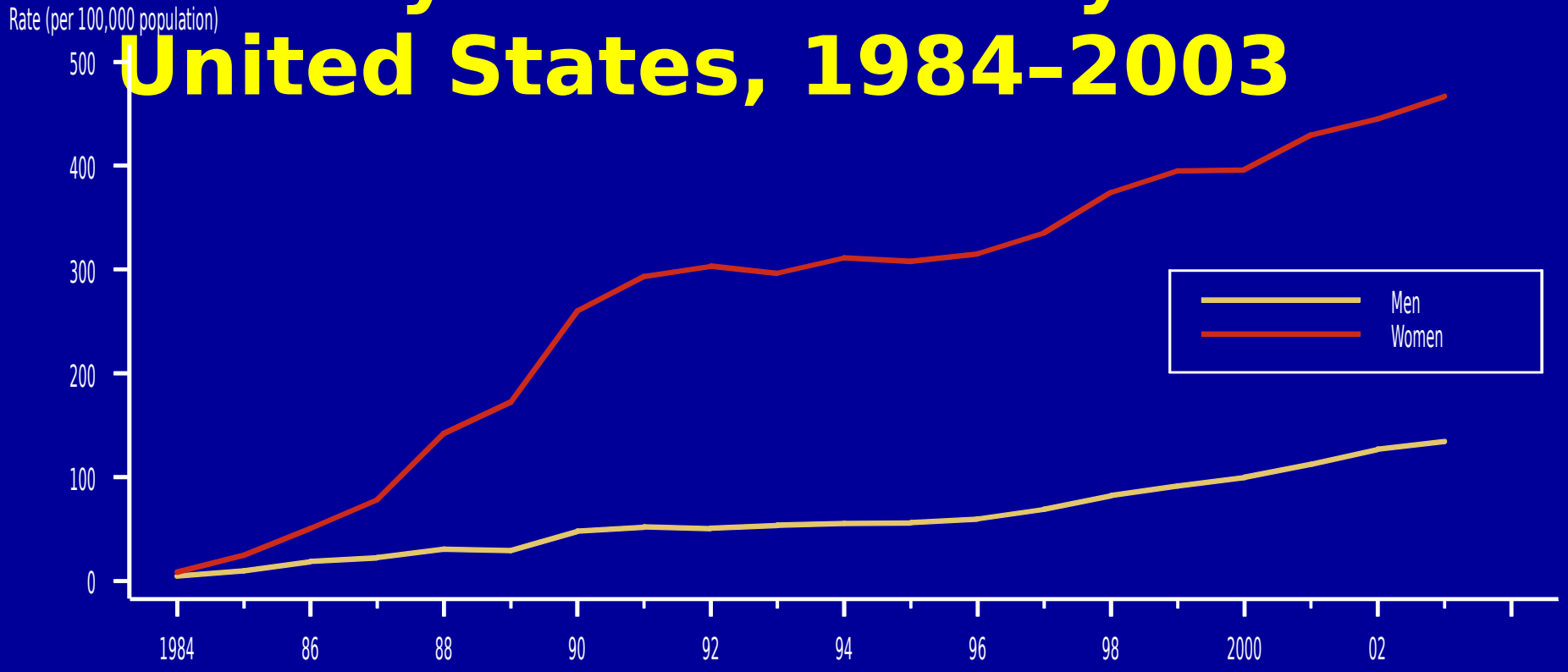
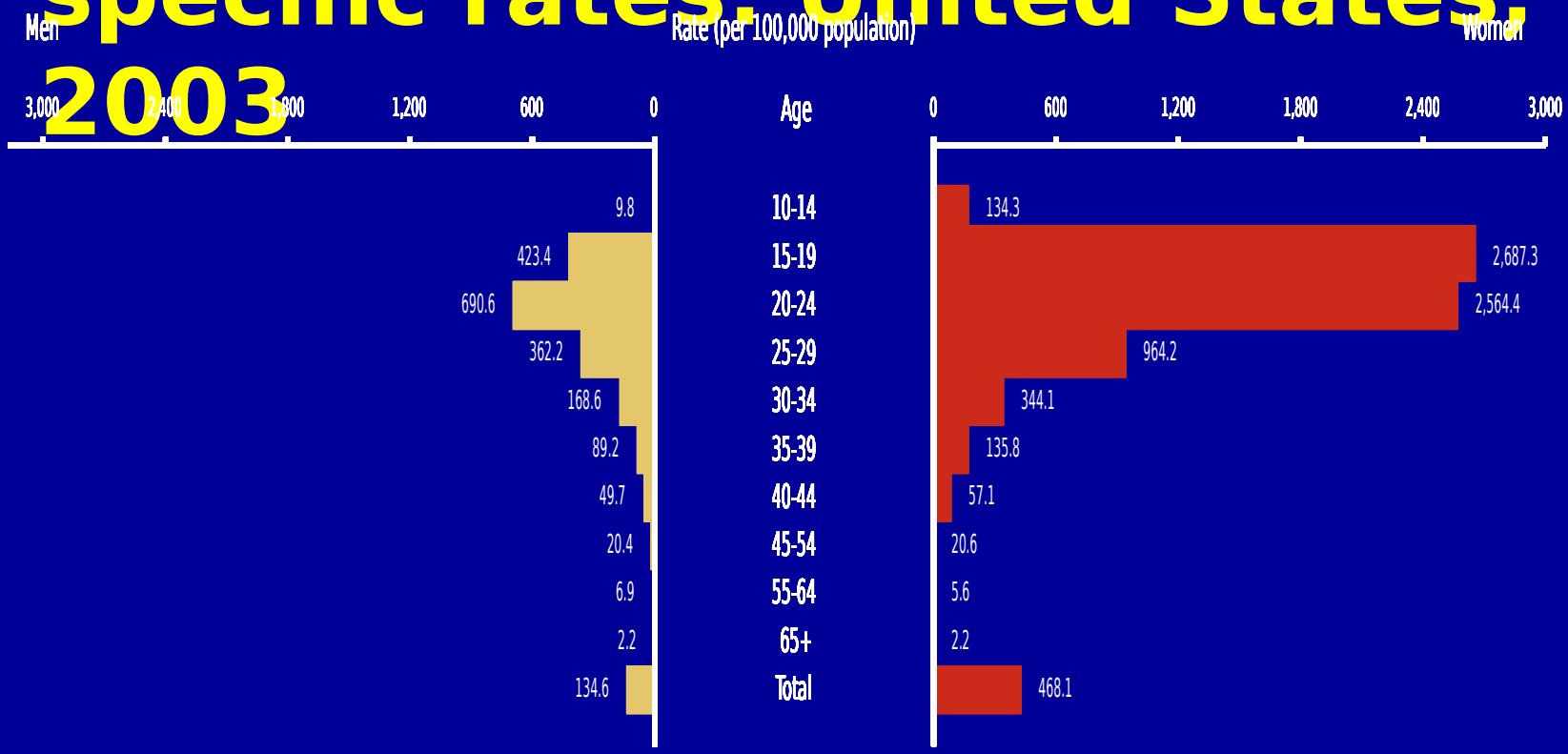
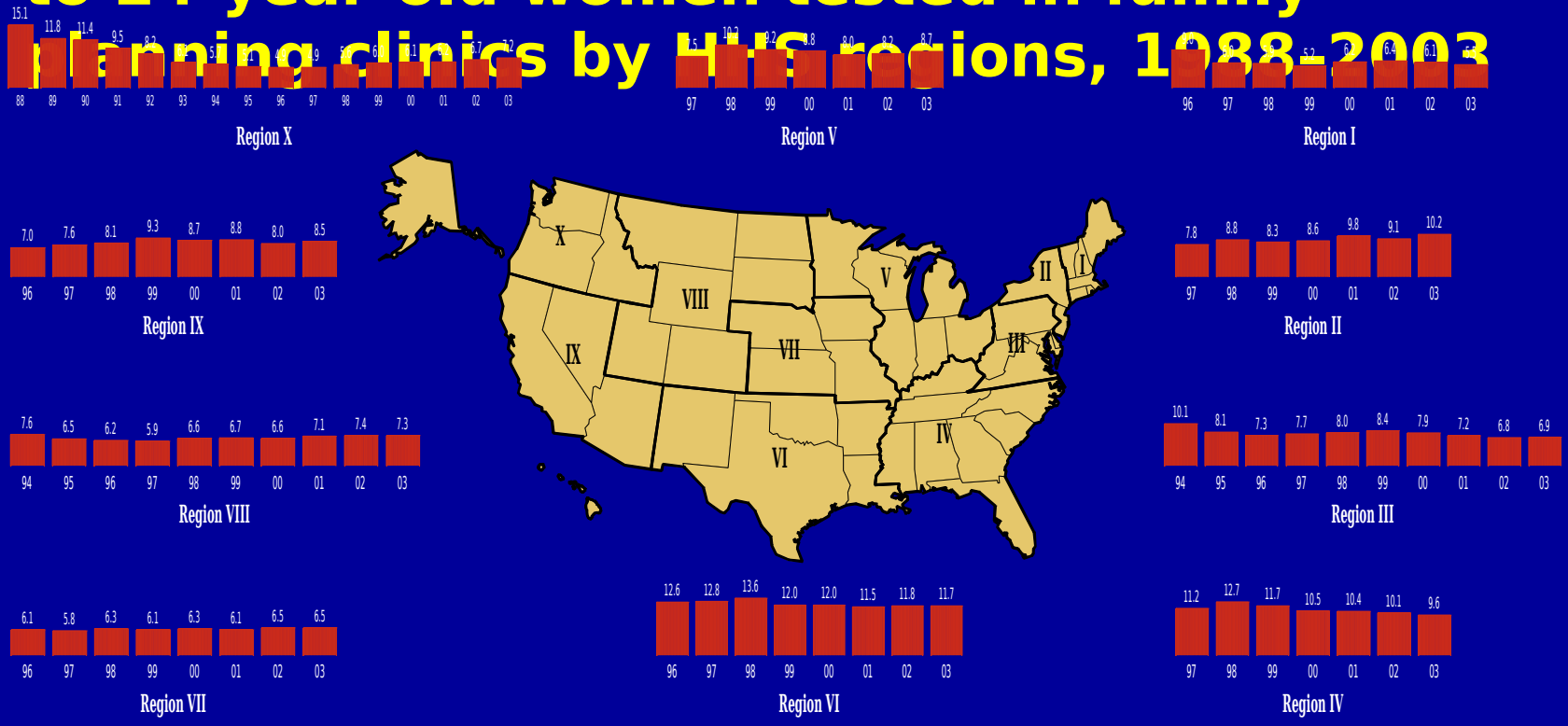
Chlamydia — Rates by sex: United States, 1984–2003



Chlamydia — Age- and sex-specific rates: United States, 2003



Chlamydia — Trends in positivity among 15- to 24-year-old women tested in family planning clinics by HHS regions, 1988-2003



Note: Trends adjusted for changes in laboratory test method and associated increases in test sensitivity. No data on laboratory test method available for Region VII in 1995 and Regions IV and V in 1996.

SOURCE: Regional Infertility Prevention Projects; Office of Population Affairs; Local and State STD

PID: A Primer

- Polymicrobial
  - 2/3 are CT, GC (+/- other bact)
  - 1/3 are anaer, aerob/fac
- Symptoms
  - **60% none**
  - 36% mild/ mod; 4% severe
- Acute complications
  - TOA in 1/3 of hospitalized
  - Fitz-Hugh-Curtis (< 30%), CT, GC link

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PID: A Primer con't

Long term complications

- Tubal factor **infertility**
  - 10x infertile; episode 1-3 (8-40%)
  - Psychosocial & financial costs
- **Ectopic** pregnancy (tubal)
  - 7-10 x ↑; 22% risk by 3rd episode
- Chronic pelvic **pain**-least known
  - 20%; ↑ by number of episodes
  - 4-10 x ↑ readmits for pain

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CDC Diagnostic Criteria for PID: Challenging

Minimum criteria on exam (subjective!):

- Uterine/adnexal tenderness (uni/bi)*
- Cervical motion tenderness (CMT)*

Additional criteria (↑ spec & ↓ sens):

T, C-react prot, wbc NaCl, mucopus, CT, GC, esr

Adjuncts (definitive, expensive, invasive):

- Endometral bx, ultrasound, laparoscopy

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The Case for Subclinical PID…

Lower Genital Tract Infection and Endometritis: Insight into Subclinical PID.

Wiesenfeld, Hillier, Krohn, Amortegui, Krohn, Heine, Landers, Sweet, Ob Gyn 2002; 100:456-63.

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Methods of Subclinical PID Study

- **Subjects:** N=556 Exclude PID (+) by CDC Guidelines 91998)

  Untreated women from STD & ambulatory clinics if had 1 or more:
  - mucopurulent cervicitis on exam
  - GC +/- CT positive
  - Bacterial vaginosis by Amsel's critieria
  - Male contact with GC, CT or NGU

Methods of Subclinical PID Study

- **Definition of Subclinical PID**:
  (histology of endometrial biopsy of uteri in PID (-) women defn of old 1998 CDC guidelines):

  ≥ **5 PMNs** in superficial endometrial epithelium/400 x field &

  ≥ **1 plasma cell** / 120 x field
- **Clinical**: Gyn history, pelvic exam, STI samples, endometrial biopsy

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Results of Subclinical PID Study

Subclinical PID present in:

- 27% CT+ (OR 3.4, 95% CI 1.8, 6.3)
- 26% GC+ (OR 2.4; 95% CI 1.1, 5.1)

Conclude:

- More than **1 in 4** women with positive CT and/ or GC have subclinical PID!

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Can We Use Population Studies to Develop Policy to Screen Women?

	Scholes et al 1996	Clark et al 2002
Target	Pop-based HMO	Army-subset recruit
Outcome	Hosp & Outpt PID	Hosp PID code only
Design	Randomized	Convenience bias
	Screened vs not	Screened vs not
Methods	Ques, chart rev	Hosp code Dx only
Results	**Screened: ↓PID any reason; PID same**	**↑ Hospitalized**
Limits	CT test ↓ sens	Hosp code only

Old Cost-Effectiveness Studies

- Many based on old and flawed data
- PID is largely a subjective not objective Dx and populations and definitions varied
- Most based on in-patient codes for PID – inaccurate & not include outpatient PID Dx
- Most PID subclinical and missed in most analyses, yet →leads to severe sequelae

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Studies
Hu et al Ann Int Med Oct 2004

Obj: Assess CE of CDC screen guidelines
Meth: State transition simulate lifetime cost
Pop: Sex act 15-29 yo ♀100,000 theoretical
Groups: 15-19y, 20-24y, 15-29y x 4 strategies:

1. no screening (state if most military)
2. annual screening of all women
3. annual, FU repeat x once in 3-6 mos
4. annual FU repeat q 6 mos retest ***IF*** hx CT+

Studies
Hu et al Ann Int Med Oct 2004

Findings of theoretical 100,000 F cohort:

- CT Screening prevents 11-42% sequelae
- Annual screening 15-29 yo *plus* rescreen CT(+) every 6 mos *MOST* cost effective
- Incremental CE ratio<$50,000/Qaly (99%)

→ ***And Military CT rates are 8-12% or more!***

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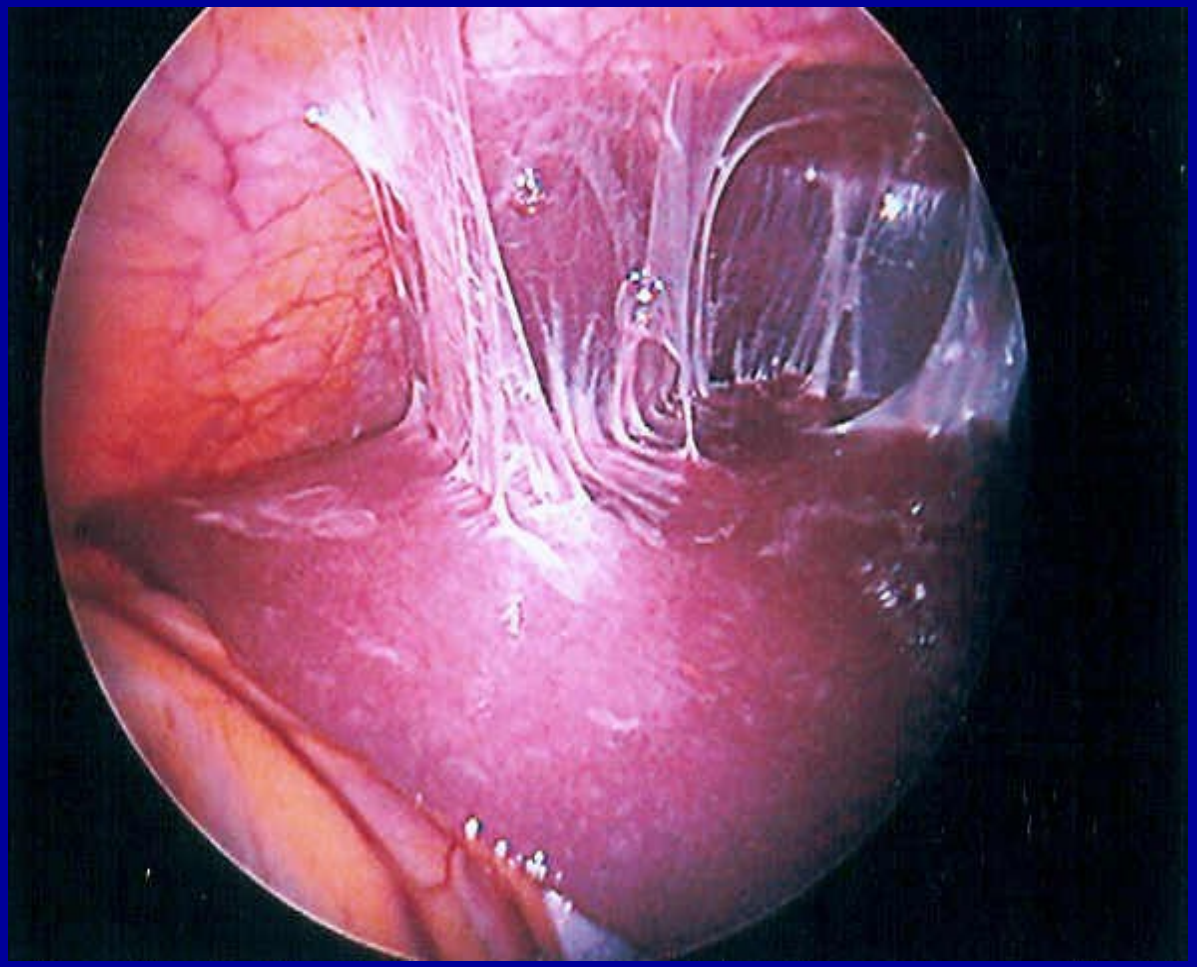
Fitz Hugh Curtis



A Word About STI Prevention among Military Women

Boyer, Shafer, Shaffer, Brodine, et al. Evaluation of a cognitive-behavioral, group, randomized controlled intervention trial to prevent sexually transmitted infections and unintended pregnancies in young women. *Preventive Medicine* 40(2005):420-431, 2005.

FOCUS

…on the choices you make now that will affect your future and career

Military STI Prevention Study Group

Civilians: UCSF	Military: NHRC-SD
Cherrie Boyer (PI)	Richard Shaffer
Mary-Ann Shafer (Co-PI)	Stephanie Brodine
Lance Pollack	Heidi Kraft
Kelli Betsinger	
Y Jason Chang	
Julius Schachter	

PROGRAM OBJECTIVE

To evaluate the feasibility and effectiveness of a cognitive-behavioral intervention to prevent and reduce the risk of HIV/STDs and unplanned pregnancies (UIPs) in young women from throughout the United States entering recruit training for the military.

Evaluation of a Cognitive-Behavioral Intervention to Prevent STI's in Military Women

Pop: Women Marine Recruits (N=2157)

Methods: Randomized, control trial, 8 hrs interactive didactic, skills building, STI screening

Groups: Intervention *FOCUS*

Control *FITNESS*

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What Does All This Mean for the Military?

- Military women CT prevalence high (screen)
  Recruits: ~9-11% (Gaydos, Shafer & Boyer)
  Active: 7% Navy (Brodine, Shafer, Boyer)
  Acquisition: first year of active duty-high
- Most CT infections have no symptoms
- Most PID costs incurred within first
  1- 3 years, i.e., during first tour (Yeh, Rein)

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What Does This Mean for the Military?

- CT screening is easy-urine based- ***can do***!
- CT screening is cost-effective (Hu et al)
- Will lack of screening prove to be a threat to readiness due to sequelae of PID??
- Will women vets hold military responsible in the future for providing ***less than the standard of care*** for CT screening ???

Why Screen Military Women for CT?

- CT most common bacterial STD in military women
- Recruits age parallel peak age for CT
- High STI rates→ at-risk for PID and severe sequelae
- CT likely increases risk for HIV acquisition
- CT likely increases risk for HPV→ cervical CA
- Untreated→ CT persists→ CT transmitted to M & F
- Untreated→ CT neonatal infections
- Untreated→ PID develops 10-30% of cases
- >60% or more of PID is subclinical or asymptomatic
- PID→ infertility, ectopic preg, chronic pelvic pain

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Bottom Line

- Well designed cost effectiveness studies show clear benefit to screening
- All national guidelines including AFEB recommend annual CT screening
- Military women recruits enter with a high STI burden, continue acquisition in Yr 1

Bottom Line

- PID must be over-diagnosed and over-treated because difficult to diagnose & has severe sequelae
- Do the right thing for military women's health
- Consider screening men since most military women have sex with military men

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Next Steps

Recommendations from Editorial:

Brodine S CAPT MC, USN, Ret, Shafer MA:

Combating Chlamydia in the Military:

Why Aren't We Winning the War ?

Sex Trans Dis 307:545-548, 2003

Recommendations

- Overall
  - To develop, implement, and track a comprehensive tri-service CT control program, including primary and secondary prevention interventions to decrease Ct acquisition, transmission and morbidity

Recommendations con't

1. Immediately - implement a universal screening plan for all female recruits using urine-based CT testing; consider annual universal screening for active duty women
2. Urgently - address the gap: CDC and DoD policy & practice regarding CT screening

Recommendations con't

3. Evaluate need for screening male recruits and active duty
4. Develop a comprehensive triservice surveillance system with data sharing among the military organizations and national and local public health departments to target needed services and measure outcomes of programs designed to control the CT epidemic

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Recommendations con't

5. Support, develop and evaluate epidemiologic and behavioral-cognitive interventions designed to prevent the acquisition of STI's especially chlamydia and HIV

AFTER YEARS OF FITTING IN, MAYBE IT'S TIME TO STAND OUT

Finally….

DO THE RIGHT THING!